<u>Abstract</u>

The invention relates to a method for the deposition of, in particular crystalline layers on a substrate lying on rotating substrate holders in a process chamber. The substrate holders are arranged around the center of a rotating substrate holder support. Said substrate holder support forms a process chamber base together with the substrate holders, which is opposite a process chamber cover which a central gas inlet device, through which, together with a carrier gas, one or several gaseous starting materials may be introduced into a decomposition zone, arranged above a heated central region of the process chamber floor, surrounded by a diffusion zone, from which the decomposition zone, from which the decomposition products are transported radially outwards in the carrier gas stream to the substrate. According to the invention, the supply of decomposition products to the substrate may be equilibrated, whereby the central region of the process chamber base is rotated relative to the substrate holder support and to the process chamber cover or the gas inlet device.